

=> fil reg
FILE 'REGISTRY' ENTERED AT 11:24:13 ON 18 APR 2007
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STRUCTURE FILE UPDATES: 16 APR 2007 HIGHEST RN 930395-50-9
DICTIONARY FILE UPDATES: 16 APR 2007 HIGHEST RN 930395-50-9

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=> d ide can tot 120

L20 ANSWER 1 OF 3 REGISTRY COPYRIGHT 2007 ACS on STN
RN 63733-35-7 REGISTRY
ED Entered STN: 16 Nov 1984
CN Cobalt alloy, base, Co,Sn (CA INDEX NAME)
MF Co . Sn
CI AYS
LC STN Files: CA, CAPLUS, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPAT2, USPATFULL

Component	Component
Registry Number	
Co	7440-48-4
Sn	7440-31-5

13 REFERENCES IN FILE CA (1907 TO DATE)
13 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 146:11133
REFERENCE 2: 145:261093
REFERENCE 3: 144:322855
REFERENCE 4: 138:274598
REFERENCE 5: 127:100392
REFERENCE 6: 123:15241
REFERENCE 7: 108:159973

REFERENCE 8: 108:45899

REFERENCE 9: 105:215750

REFERENCE 10: 97:117487

L20 ANSWER 2 OF 3 REGISTRY COPYRIGHT 2007 ACS on STN
 RN 57886-64-3 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Tin alloy, base, Sn,Co (9CI) (CA INDEX NAME)
 MF Co . Sn
 CI AYS
 LC STN Files: CA, CAPLUS, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPATFULL

Component Component
 Registry Number

Component	Component Registry Number
Sn	7440-31-5
Co	7440-48-4

45 REFERENCES IN FILE CA (1907 TO DATE)
 45 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 146:70352

REFERENCE 2: 145:445180

REFERENCE 3: 144:257678

REFERENCE 4: 143:329165

REFERENCE 5: 140:131895

REFERENCE 6: 138:404347

REFERENCE 7: 137:239058

REFERENCE 8: 137:12234

REFERENCE 9: 135:52699

REFERENCE 10: 132:70700

L20 ANSWER 3 OF 3 REGISTRY COPYRIGHT 2007 ACS on STN
 RN 39286-52-7 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Cobalt alloy, nonbase, Co,Sn (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Cobalt alloys, tin- (7CI)
 DR 115456-78-5
 MF Co . Sn
 CI AYS
 LC STN Files: CA, CAPLUS, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPAT2,
 USPATFULL

Component Component
 Registry Number

Component	Component Registry Number
Co	7440-48-4

Sn 7440-31-5

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

191 REFERENCES IN FILE CA (1907 TO DATE)
 191 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 146:341039
 REFERENCE 2: 146:277759
 REFERENCE 3: 146:277741
 REFERENCE 4: 146:256063
 REFERENCE 5: 146:187500
 REFERENCE 6: 146:48670
 REFERENCE 7: 146:37521
 REFERENCE 8: 146:29946
 REFERENCE 9: 146:11737
 REFERENCE 10: 145:361314

=> d ide can 110

L10 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2007 ACS on STN
 RN **12394-61-5** REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Tin, compd. with cobalt (2:1)
 MF Co . Sn
 AF Co Sn2
 CI TIS
 LC STN Files: CA, CAOLD, CAPLUS, USPATFULL

Component	Ratio	Component Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

48 REFERENCES IN FILE CA (1907 TO DATE)
 48 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 146:255120
 REFERENCE 2: 146:233528
 REFERENCE 3: 146:209811

REFERENCE 4: 146:209579
 REFERENCE 5: 146:152256
 REFERENCE 6: 145:338982
 REFERENCE 7: 145:317946
 REFERENCE 8: 145:127534
 REFERENCE 9: 145:114142
 REFERENCE 10: 144:316062

=> d ide can 112

L12 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2007 ACS on STN
 RN 12526-67-9 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Cobalt, compd. with tin (3:2) (7CI, 8CI, 9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Tin, compd. with cobalt (2:3) (8CI)
 MF Co . Sn
 AF Co3 Sn2
 CI TIS
 LC STN Files: CA, CAOLD, CAPLUS, USPAT2, USPATFULL

Component	Ratio	Component Registry Number
Co	3	7440-48-4
Sn	2	7440-31-5

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

37 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 37 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 145:338982
 REFERENCE 2: 145:107635
 REFERENCE 3: 144:359090
 REFERENCE 4: 144:112035
 REFERENCE 5: 141:263470
 REFERENCE 6: 141:91776
 REFERENCE 7: 140:306707
 REFERENCE 8: 140:238516
 REFERENCE 9: 139:153047

REFERENCE 10: 139:24815

=> d ide can 18

L8 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2007 ACS on STN
 RN 7440-31-5 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Tin (CA INDEX NAME)
 OTHER NAMES:
 CN AT-SN
 CN C.I. 77860
 CN C.I. Pigment Metal 5
 CN Metallic tin
 CN PO 1
 CN PO 2
 CN Silver Matt Powder
 CN Sn-HWQ
 CN Sn-S 200
 CN Sn-S-HWQ
 CN SNE 06PB
 CN TEGO 30
 CN TEGO 60
 CN Tin element
 CN Tin Flake
 CN Tin Paste 62-1177
 CN Tin Powder
 CN Wang
 MF Sn
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)

Sn

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

97794 REFERENCES IN FILE CA (1907 TO DATE)
 7190 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 98024 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 146:350152

REFERENCE 2: 146:350085

REFERENCE 3: 146:349970

REFERENCE 4: 146:349855

REFERENCE 5: 146:349767
 REFERENCE 6: 146:349492
 REFERENCE 7: 146:349491
 REFERENCE 8: 146:349296
 REFERENCE 9: 146:349080
 REFERENCE 10: 146:349003

=> d que 122
 L21 194 SEA FILE=REGISTRY ABB=ON PLU=ON SN/MF
 L22 55 SEA FILE=REGISTRY ABB=ON PLU=ON L21 NOT MASS

=> d his

(FILE 'HOME' ENTERED AT 09:51:02 ON 18 APR 2007)
 SET COST OFF

FILE 'HCAPLUS' ENTERED AT 09:51:26 ON 18 APR 2007
 L1 1 S US20040053131/PN OR (US2003-664683# OR JP2002-271710)/AP, PRN
 E TANIZAKI/AU
 L2 47 S E15,E19
 E HIROAKI/AU
 L3 4 S E3
 L4 4 S E50
 E OMARU/AU
 L5 43 S E4,E6
 E ATSUO/AU
 L6 1 S E3
 SEL RN L1

FILE 'REGISTRY' ENTERED AT 10:11:45 ON 18 APR 2007
 L7 21 S E1-E21
 L8 1 S L7 AND SN/MF
 L9 7 S L7 AND SN/ELS AND CO/ELS AND 2/ELC.SUB
 L10 1 S 12394-61-5
 L11 1 S 39286-52-7
 L12 1 S 12526-67-9
 L13 8159 S (CO/ELS OR COBALT OR 7440-48-4/CRN) AND (SN/ELS OR TIN OR 744
 L14 191 S L13 AND 2/ELC.SUB
 L15 184 S L14 NOT L9
 L16 80 S L15 AND NONBASE
 L17 3 S L16 AND CO(A)SN
 L18 171 S L15 AND BASE
 L19 2 S L18 AND CO(A)SN
 L20 3 S L11,L17,L19
 L21 194 S SN/MF
 L22 55 S L21 NOT MASS

FILE 'HCAPLUS' ENTERED AT 10:19:58 ON 18 APR 2007
 L23 248 S L20
 L24 282 S COSN
 L25 515 S L23,L24
 L26 48 S L10

L27 50 S COSN2
 L28 81 S L26, L27
 L29 37 S L12
 L30 47 S CO3SN2
 L31 59 S L29, L30
 L32 99798 S L8, L22
 L33 4 S L25 AND L28 AND L31 AND L32
 L34 10 S L25 AND L28 AND L32
 L35 6 S L25 AND L31 AND L32
 L36 6 S L28 AND L31 AND L32
 L37 14 S L33-L36

FILE 'REGISTRY' ENTERED AT 10:24:29 ON 18 APR 2007

FILE 'HCAPLUS' ENTERED AT 10:26:04 ON 18 APR 2007

L38 13 S L25 AND L28 AND L31
 L39 23 S L37, L38
 L40 248 S L11, L17, L19
 L41 48 S L10
 L42 37 S L12
 L43 1 S L40 AND L41 AND L42
 L44 14 S L37, L43
 L45 1 S L1-L6 AND L44
 L46 56 S L1-L6 AND SONY?/PA, CS
 L47 4 S L46 AND PY<=2002 NOT P/DT
 L48 51 S L46 AND (PD<=20020918 OR PRD<=20020918 OR AD<=20020918) AND P
 L49 4 S L46 AND PY<=2003 NOT P/DT
 L50 52 S L46 AND (PD<=20030918 OR PRD<=20030918 OR AD<=20030918) AND P
 L51 56 S L47-L50
 L52 5 S L45, L51 AND L32
 L53 12 S L37 AND PY<=2002 NOT P/DT
 L54 12 S L37 AND PY<=2003 NOT P/DT
 L55 2 S L37 NOT L53, L54
 L56 18 S L52-L55
 L57 1828 S L40 OR SN(A)CO OR COSN OR L23 OR L24
 L58 14 S L57 AND L28 AND L31
 L59 4 S L58 AND L32
 L60 16 S L57 AND L28 AND L32
 L61 9 S L57 AND L31 AND L32
 L62 6 S L28 AND L31 AND L32
 L63 33 S L58-L62
 L64 23 S L63 AND PY<=2003 NOT P/DT
 L65 23 S L63 AND PY<=2002 NOT P/DT
 L66 3 S L63 AND (PD<=20020918 OR PRD<=20020918 OR AD<=20020918) AND P
 L67 3 S L63 AND (PD<=20030918 OR PRD<=20030918 OR AD<=20030918) AND P
 E ELECTRODE/CW, CT
 L68 0 S L64-L67 AND E3, E4
 L69 0 S L64-L67 AND E94, E95
 L70 3 S L64-L67 AND E95+OLD, NT
 L71 5 S L64-L67 AND ?ELECTRODE?
 L72 6 S L70, L71
 L73 1 S L63-L72 AND L1-L6
 L74 2 S L63-L72 AND SONY?/PA, CS
 L75 6 S L72-L74
 L76 20 S L64-L74 NOT L75
 SEL DN AN 1 13 15 16 20
 L77 5 S L76 AND E1-E15
 L78 11 S L75, L77
 L79 7 S L44 NOT L78

FILE 'REGISTRY' ENTERED AT 11:12:43 ON 18 APR 2007

L80 114970 S LI/ELS OR ?LITHIUM?/CNS OR 7439-93-2/CRN
 L81 5954 S L80 AND (B/ELS OR (?BORON? OR ?BORAT? OR ?BORIC?)/CNS OR 7440
 L82 1012 S L80 AND (GA/ELS OR ?GALLIUM?/CNS OR 7440-55-3/CRN)
 L83 935 S L80 AND (SB/ELS OR ?ANTIMON?/CNS OR 7440-36-0/CRN)
 L84 439 S L80 AND (CD/ELS OR ?CADIUM?/CNS OR 7440-43-9/CRN)
 L85 1320 S L80 AND (AG/ELS OR ?SILVER?/CNS OR 7440-22-4/CRN)
 L86 355 S L80 AND (HF/ELS OR ?HAFNIUM?/CNS OR 7440-58-6/CRN)
 L87 9769 S L81-L86

FILE 'HCAPLUS' ENTERED AT 11:15:37 ON 18 APR 2007

L88 17007 S L87
 L89 6 S L88 AND L57
 L90 1 S L88 AND L28
 L91 0 S L88 AND L31
 L92 215 S L88 AND L32
 L93 0 S L89, L90 AND L92
 L94 7 S L89, L90
 L95 5 S L94 NOT (98:72913 OR 96:122986) /DN
 L96 0 S L95 AND PY<=2002 NOT P/DT
 L97 0 S L95 AND PY<=2003 NOT P/DT
 L98 4 S L95 AND (PD<=20030918 OR PRD<=20030918 OR AD<=20030918) AND P
 L99 3 S L95 AND (PD<=20020918 OR PRD<=20020918 OR AD<=20020918) AND P
 L100 4 S L98, L99
 L101 3 S L100 NOT SOLUTION/TI
 L102 14 S L78, L101
 L103 14 S L102 AND (SN OR TIN OR LI OR LITHIUM OR CO OR COBALT OR ?CARB

FILE 'REGISTRY' ENTERED AT 11:20:07 ON 18 APR 2007

L104 2 S (CARBON OR GRAPHITE)/CN

FILE 'HCAPLUS' ENTERED AT 11:20:09 ON 18 APR 2007

L105 2 S L104 AND L102
 L106 14 S L103, L105
 SEL HIT RN

FILE 'REGISTRY' ENTERED AT 11:21:11 ON 18 APR 2007

L107 18 S E16-E33
 L108 13 S L107 AND L87
 L109 5 S L107 NOT L108

FILE 'REGISTRY' ENTERED AT 11:24:13 ON 18 APR 2007

=> fil hcaplus
 FILE 'HCAPLUS' ENTERED AT 11:25:14 ON 18 APR 2007
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FILE COVERS 1907 - 18 Apr 2007 VOL 146 ISS 17
 FILE LAST UPDATED: 16 Apr 2007 (20070416/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

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L114 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:219896 HCAPLUS Full-text

DN 140:238516

TI Battery using anode material including **tin**

IN Tanizaki, Hiroaki; Omaru, Atsuo

PA Sony Corporation, Japan

SO U.S. Pat. Appl. Publ., 9 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004053131	A1	20040318	US 2003-664683	20030918 <--
	JP 2004111202	A	20040408	JP 2002-271710	20020918 <--
	JP 3755506	B2	20060315		
	CN 1495941	A	20040512	CN 2003-164820	20030918 <--
PRAI	JP 2002-271710	A	20020918	<--	

AB Provided is a battery with a higher capacity and superior charge-discharge cycle characteristics. A cathode contained in a package can and an anode contained in a package cup are laminated with a separator in between. The separator is impregnated with an electrolyte solution formed by dissolving lithium salt in a solvent. The anode comprises a **tin** -containing material including metallic **tin** and an intermetallic compound including **tin** in the same particle. A higher capacity and superior charge-discharge cycles can be obtained by the **tin** -containing material.

IC ICM H01M0004-38

ICS H01M0004-62; H01M0004-48

INCL 429218100; 429232000; 429231100

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 56

ST battery anode **tin** contg intermetallic

IT **Battery anodes**

Heat treatment

Mechanical alloying

Secondary batteries

(battery using anode material including **tin**)

IT **Carbonaceous materials (technological products)**

RL: MOA (Modifier or additive use); USES (Uses)

(battery using anode material including **tin**)

IT Atomizing (spraying)

(pneumatic; battery using anode material including **tin**)

IT **Intermetallic compounds**

RL: DEV (Device component use); SPN (Synthetic preparation); PREP

(Preparation); USES (Uses)

(**tin**-containing; battery using anode material including **tin**)

IT Atomizing (spraying)

(water; battery using anode material including **tin**)

IT 7440-31-5, **Tin**, uses 12019-61-3 12019-69-1

12023-00-6 12023-01-7 12297-65-3 **12394-61-5**
12526-67-9
 RL: DEV (Device component use); USES (Uses)
 (battery using anode material including **tin**)
 IT 12682-91-6P 55918-93-9P 62186-40-7P 67828-86-8P 70797-67-0P
 70993-37-2P 83746-47-8P 102984-63-4P 146660-29-9P 252231-06-4P
 260805-53-6P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (battery using anode material including **tin**)
 IT **7782-42-5, Graphite**, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (battery using anode material including **tin**)
 IT 7440-37-1, Argon, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (battery using anode material including **tin**)
 IT **7440-31-5, Tin**, uses **12394-61-5**
12526-67-9
 RL: DEV (Device component use); USES (Uses)
 (battery using anode material including **tin**)
 RN 7440-31-5 HCAPLUS
 CN Tin (CA INDEX NAME)

Sn

RN 12394-61-5 HCAPLUS
 CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

RN 12526-67-9 HCAPLUS
 CN Cobalt, compd. with tin (3:2) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
Co	3	7440-48-4
Sn	2	7440-31-5

IT **7782-42-5, Graphite**, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (battery using anode material including **tin**)
 RN 7782-42-5 HCAPLUS
 CN Graphite (CA INDEX NAME)

C

DN 136:297394
 TI Solid electrolyte cell
 IN Goto, Shuji; Hosoya, Mamoru; Endo, Takahiro
 PA Sony Corporation, Japan
 SO Eur. Pat. Appl., 16 pp.
 CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1195826	A2	20020410	EP 2001-123774	20011004 <--
	EP 1195826	A3	20031126		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2002117844	A	20020419	JP 2000-306876	20001005 <--
	US 2002094481	A1	20020718	US 2001-966864	20010928 <--
	US 6720113	B2	20040413		
	TW 523952	B	20030311	TW 2001-90124127	20010928 <--
	CN 1349273	A	20020515	CN 2001-139323	20010930 <--
	CA 2358294	A1	20020405	CA 2001-2358294	20011003 <--
PRAI	JP 2000-306876	A	20001005 <--		

AB A solid electrolyte cell in which cell characteristics are not deteriorated even on overdischarge to the cell voltage of 0 V, such that the shape of the cell encapsulated in the laminate film is maintained. The cell includes a cathode containing a compound represented by the general formula $LixFe1-yMyPO4$ where $0.05 \leq x \leq 1.2$, $0 \leq y \leq 0.8$, and M is at least one selected from the group consisting of Mn, Cr, Co, Cu, Ni, V, Mo, Ti, Zn, Al, Ga, Mg, B and Nb, an anode and a solid electrolyte. An electrode unit 1 comprised of the cathode and the anode layered together with interposition of the solid electrolyte is encapsulated with a laminate film 2.

IC ICM H01M0004-58

ICS H01M0010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Polyoxyalkylenes, uses

RL: DEV (Device component use); USES (Uses)
 (lithium complex; solid electrolyte cell)

IT Battery cathodes

Secondary batteries

(solid electrolyte cell)

IT 7439-93-2D, Lithium, polyethylene oxide complex 7791-03-9,

Lithium perchlorate 12031-65-1, Lithium nickel oxide

linio2 12057-17-9, Lithium manganese oxide limn2o4

15365-14-7, Iron lithium phosphate felipo4 25322-68-3D,

Polyethylene oxide, lithium complex 116327-69-6,

Cobalt lithium nickel oxide Co0.1LiNi0.9O2

147812-18-8, Iron lithium manganese oxide Fe0.05LiMn1.95O4

407606-22-8, Chromium iron lithium phosphate

(Cr0-0.8Fe0.2-1Li0.05-1.2(PO4)) 407606-24-0, Cobalt iron

lithium phosphate (Co0-0.8Fe0.2-1Li0.05-1.2(PO4)) 407606-26-2,

Copper iron lithium phosphate (Cu0-0.8Fe0.2-1Li0.05-1.2(PO4))

407606-28-4, Aluminum iron lithium phosphate

(Al0-0.8Fe0.2-1Li0.05-1.2(PO4)) 407606-30-8, Gallium iron

lithium phosphate (Ga0-0.8Fe0.2-1Li0.05-1.2(PO4))

407606-32-0, Boron iron lithium phosphate

(B0-0.8Fe0.2-1Li0.05-1.2(PO4)) 407606-34-2, Iron lithium

manganese phosphate (Fe0.2-1Li0.05-1.2Mn0-0.8(PO4)) 407606-36-4, Iron

lithium nickel phosphate (Fe0.2-1Li0.05-1.2Ni0-0.8(PO4))

407606-39-7, Iron lithium vanadium phosphate

(Fe0.2-1Li0.05-1.2V0-0.8(PO4)) 407606-42-2, Iron lithium

molybdenum phosphate ($Fe0.2-1Li0.05-1.2Mo0-0.8(PO4)$) 407606-44-4, Iron lithium titanium phosphate ($Fe0.2-1Li0.05-1.2Ti0-0.8(PO4)$) 407606-47-7, Iron lithium zinc phosphate ($Fe0.2-1Li0.05-1.2Zn0-0.8(PO4)$) 407606-49-9, Iron lithium magnesium phosphate ($Fe0.2-1Li0.05-1.2Mg0-0.8(PO4)$) 407606-51-3, Iron lithium niobium phosphate ($Fe0.2-1Li0.05-1.2Nb0-0.8(PO4)$) 408331-94-2, Cobalt lithium nickel oxide ($(Co, Ni)Li0-202$) 408331-95-3, Cobalt lithium manganese oxide ((Co, Mn) $Li0-202$) 408331-96-4, Cobalt lithium zinc oxide ((Co, Zn) $Li0-202$) 408331-97-5, Cobalt lithium tin oxide ((Co, Sn) $Li0-202$) 408331-99-7, Cobalt lithium vanadium oxide ((Co, V) $Li0-202$) 408332-00-3, Cobalt lithium titanium oxide ((Co, Ti) $Li0-202$) 408332-01-4, Cobalt lithium molybdenum oxide ((Co, Mo) $Li0-202$) 408332-02-5, Cobalt lithium tungsten oxide ((Co, W) $Li0-202$) 408332-03-6, Cobalt lithium magnesium oxide ((Co, Mg) $Li0-202$) 408332-04-7, Cobalt lithium strontium oxide ((Co, Sr) $Li0-202$) 408332-05-8, Cobalt lithium niobium oxide ((Co, Nb) $Li0-202$) 408332-06-9, Cobalt iron lithium oxide ((Co, Fe) $Li0-202$) 408332-07-0, Cobalt copper lithium oxide ((Co, Cu) $Li0-202$) 408332-08-1, Aluminum cobalt lithium oxide ((Al, Co) $Li0-202$) 408332-09-2, Cobalt lithium borate oxide ($Co0-1Li0-2(BO2)0-100-2$) 408332-10-5, Cobalt gallium lithium oxide ((Co, Ga) $Li0-202$) 408332-11-6, Chromium cobalt lithium oxide ((Cr, Co) $Li0-202$) 408332-12-7, Calcium cobalt lithium oxide ((Ca, Co) $Li0-202$) 408332-13-8, Iron lithium nickel oxide ((Fe, Ni) $Li0-202$) 408332-14-9, Copper lithium nickel oxide ((Cu, Ni) $Li0-202$) 408332-15-0, Aluminum lithium nickel oxide ((Al, Ni) $Li0-202$) 408332-16-1, Lithium nickel borate oxide ($Li0-2Ni0-1(BO2)0-100-2$) 408332-17-2, Gallium lithium nickel oxide ((Ga, Ni) $Li0-202$) 408332-18-3, Chromium lithium nickel oxide ((Cr, Ni) $Li0-202$) 408332-19-4, Calcium lithium nickel oxide ((Ca, Ni) $Li0-202$) 408332-20-7, Lithium manganese nickel oxide ($Li0-2(Mn, Ni)O2$) 408332-21-8, Lithium nickel zinc oxide ($Li0-2(Ni, Zn)O2$) 408332-22-9, Lithium nickel tin oxide ($Li0-2(Ni, Sn)O2$) 408332-23-0, Lithium nickel vanadium oxide ($Li0-2(Ni, V)O2$) 408332-24-1, Lithium nickel titanium oxide ($Li0-2(Ni, Ti)O2$) 408332-25-2, Lithium nickel tungsten oxide ($Li0-2(Ni, W)O2$) 408332-26-3, Lithium molybdenum nickel oxide ($Li0-2(Mo, Ni)O2$) 408332-27-4, Lithium magnesium nickel oxide ($Li0-2(Mg, Ni)O2$) 408332-28-5, Lithium nickel strontium oxide ($Li0-2(Ni, Sr)O2$) 408332-29-6, Lithium nickel niobium oxide ($Li0-2(Ni, Nb)O2$) 408332-30-9, Lithium manganese nickel oxide ($Li0-2(Mn, Ni)2O4$) 408332-31-0, Lithium manganese zinc oxide ($Li0-2(Mn, Zn)2O4$) 408332-32-1, Lithium manganese tin oxide ($Li0-2(Mn, Sn)2O4$) 408332-33-2, Lithium manganese vanadium oxide ($Li0-2(Mn, V)2O4$) 408332-34-3, Lithium manganese titanium oxide ($Li0-2(Mn, Ti)2O4$) 408332-35-4, Lithium manganese molybdenum oxide ($Li0-2(Mn, Mo)2O4$) 408332-36-5, Lithium manganese tungsten oxide ($Li0-2(Mn, W)2O4$) 408332-37-6, Lithium magnesium manganese oxide ($Li0-2(Mg, Mn)2O4$) 408332-38-7, Lithium manganese strontium oxide ($Li0-2(Mn, Sr)2O4$) 408332-39-8, Lithium manganese niobium oxide ($Li0-2(Mn, Nb)2O4$) 408332-40-1, Iron lithium manganese oxide ((Fe, Mn) $2Li0-204$) 408332-42-3, Cobalt lithium manganese oxide ((Co, Mn) $2Li0-204$) 408332-44-5, Aluminum lithium

manganese oxide ((Al,Mn)2Li0-204) 408332-45-6, Lithium
 manganese borate oxide (Li0-2Mn0-2(BO2)0-200-4) 408332-46-7,
 Gallium lithium manganese oxide ((Ga,Mn)2Li0-204) 408332-47-8,
 Chromium lithium manganese oxide ((Cr,Mn)2Li0-204)
 408332-48-9, Calcium lithium manganese oxide ((Ca,Mn)2Li0-204)
 408332-58-1, Aluminum cobalt lithium nickel oxide
 (Al0.01Co0.98LiNi0.01O2) 412351-36-1, Iron lithium manganese
 phosphate (Fe0.9LiMn0.1(PO4))
 RL: DEV (Device component use); USES (Uses)
 (solid electrolyte cell)
 IT 96-49-1, Ethylene carbonate 108-32-7, Propylene
 carbonate 7782-42-5, Graphite, uses
 12190-79-3, Cobalt lithium oxide colio2 21324-40-3,
 Lithium hexafluorophosphate 24937-79-9, Pvdf
 RL: DEV (Device component use); MOA (Modifier or additive use); USES
 (Uses)
 (solid electrolyte cell)
 IT 407606-30-8, Gallium iron lithium phosphate
 (Ga0-0.8Fe0.2-1Li0.05-1.2(PO4)) 407606-32-0, Boron iron
 lithium phosphate (B0-0.8Fe0.2-1Li0.05-1.2(PO4))
 408332-09-2, Cobalt lithium borate oxide
 (Co0-1Li0-2(BO2)0-100-2) 408332-10-5, Cobalt gallium
 lithium oxide ((Co,Ga)Li0-202) 408332-16-1,
 Lithium nickel borate oxide (Li0-2Ni0-1(BO2)0-100-2)
 408332-17-2, Gallium lithium nickel oxide
 ((Ga,Ni)Li0-202) 408332-45-6, Lithium manganese borate
 oxide (Li0-2Mn0-2(BO2)0-200-4) 408332-46-7, Gallium
 lithium manganese oxide ((Ga,Mn)2Li0-204)
 RL: DEV (Device component use); USES (Uses)
 (solid electrolyte cell)
 RN 407606-30-8 HCPLUS
 CN Gallium iron lithium phosphate (Ga0-0.8Fe0.2-1Li0.05-1.2(PO4)) (9CI) (CA
 INDEX NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
Ga	0 - 0.8	7440-55-3
Li	0.05 - 1.2	7439-93-2
Fe	0.2 - 1	7439-89-6

RN 407606-32-0 HCPLUS
 CN Boron iron lithium phosphate (B0-0.8Fe0.2-1Li0.05-1.2(PO4)) (9CI) (CA
 INDEX NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
B	0 - 0.8	7440-42-8
Li	0.05 - 1.2	7439-93-2
Fe	0.2 - 1	7439-89-6

RN 408332-09-2 HCPLUS
 CN Cobalt lithium borate oxide (Co0-1Li0-2(BO2)0-100-2) (9CI) (CA INDEX
 NAME)

Component	Ratio	Component Registry Number
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Component	Ratio	Component	Registry Number
O	0 - 2	17778-80-2	
BO ₂	0 - 1	14100-65-3	
Co	0 - 1	7440-48-4	
Li	0 - 2	7439-93-2	

RN 408332-10-5 HCAPLUS

CN Cobalt gallium lithium oxide ((Co,Ga)Li₀₋₂O₂) (9CI) (CA INDEX NAME)

Component	Ratio	Component	Registry Number
O	2	17778-80-2	
Ga	0 - 1	7440-55-3	
Co	0 - 1	7440-48-4	
Li	0 - 2	7439-93-2	

RN 408332-16-1 HCAPLUS

CN Lithium nickel borate oxide (Li₀₋₂Ni₀₋₁(BO₂)₀₋₁₀₀₋₂) (9CI) (CA INDEX NAME)

Component	Ratio	Component	Registry Number
O	0 - 2	17778-80-2	
BO ₂	0 - 1	14100-65-3	
Ni	0 - 1	7440-02-0	
Li	0 - 2	7439-93-2	

RN 408332-17-2 HCAPLUS

CN Gallium lithium nickel oxide ((Ga,Ni)Li₀₋₂O₂) (9CI) (CA INDEX NAME)

Component	Ratio	Component	Registry Number
O	2	17778-80-2	
Ga	0 - 1	7440-55-3	
Ni	0 - 1	7440-02-0	
Li	0 - 2	7439-93-2	

RN 408332-45-6 HCAPLUS

CN Lithium manganese borate oxide (Li₀₋₂Mn₀₋₂(BO₂)₀₋₂₀₀₋₄) (9CI) (CA INDEX NAME)

Component	Ratio	Component	Registry Number
O	0 - 4	17778-80-2	
BO ₂	0 - 2	14100-65-3	
Mn	0 - 2	7439-96-5	
Li	0 - 2	7439-93-2	

RN 408332-46-7 HCAPLUS

CN Gallium lithium manganese oxide ((Ga,Mn)2Li₀₋₂O₄) (9CI) (CA INDEX NAME)

Component	Ratio	Component	Registry Number
O	4	17778-80-2	
Ga	0 - 2	7440-55-3	

Mn		0 - 2		7439-96-5
Li		0 - 2		7439-93-2

IT 7782-42-5, **Graphite**, uses
 RL: DEV (Device component use); MOA (Modifier or additive use); USES
 (Uses)
 (solid electrolyte cell)
 RN 7782-42-5 HCAPLUS
 CN Graphite (CA INDEX NAME)

C

L114 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN
 AN 2002:256757 HCAPLUS Full-text
 DN 136:282003
 TI **Lithium-based cathode active materials for rechargeable lithium battery and preparation thereof**
 IN Barker, Jeremy; Saidi, M. Yazid; Swoyer, Jeffrey L.
 PA Valence Technology, Inc., UK
 SO U.S. Pat. Appl. Publ., 39 pp., Cont.-in-part of U. S. Ser. No. 484,799.
 CODEN: USXXCO

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002039687	A1	20020404	US 2001-908480	20010718 <--
	US 6723470	B2	20040420		
	US 2003129492	A1	20030710	US 2000-484799	200000118 <--
	US 7001690	B2	20060221		
	CA 2460875	A1	20010726	CA 2000-2460875	20001222 <--
	WO 2001054212	A1	20010726	WO 2000-US35302	20001222 <--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1309021	A2	20030507	EP 2003-2687	20001222 <--
	EP 1309021	A3	20030903		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003223893	A	20030808	JP 2002-362497	20001222 <--
	US 2007065724	A1	20070322	US 2006-355584	20060216 <--
PRAI	US 2000-484799	A2	200000118	<--	
	WO 2000-US35302	W	20001222	<--	
	CA 2000-2394318	A3	20001222	<--	
	EP 2000-993800	A3	20001222	<--	
	JP 2001-553602	A3	20001222	<--	
	US 2005-907880	A1	20050419		
AB	The invention provides novel lithium-mixed metal materials which, upon electrochem. interaction, release lithium ions, and are capable of reversibly cycling lithium ions. The invention provides a rechargeable lithium battery				

which comprises an electrode formed from the novel lithium-mixed metal materials. Methods for making the novel lithium-mixed metal materials and methods for using such lithium-mixed metal materials in electrochem. cells are also provided. The lithium-mixed metal materials comprise lithium and at least one other metal besides lithium. Preferred materials are lithium-mixed metal phosphates which contain lithium and two other metals besides lithium.

IC ICM H01M0004-58
 ICS C01B0025-45
 INCL 429231950
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST battery cathode lithium based active material
 IT **Battery cathodes**
 (lithium-based cathode active materials for rechargeable lithium battery and preparation thereof)
 IT Olivine-group minerals
 RL: DEV (Device component use); USES (Uses)
 (lithium-based cathode active materials for rechargeable lithium battery and preparation thereof)
 IT **Secondary batteries**
 (lithium; lithium-based cathode active materials for rechargeable lithium battery and preparation thereof)
 IT 405914-52-5, Cobalt lithium magnesium phosphate ((Co,Mg)Li(PO₄)) 405914-53-6, Cobalt lithium magnesium phosphate (Co0.9LiMg0.1(PO₄)) 405914-58-1, Cobalt lithium magnesium phosphate (Co0.95LiMg0.05(PO₄)) 405914-63-8 405914-68-3, Calcium cobalt lithium phosphate ((Ca,Co)Li(PO₄)) 405914-73-0, Calcium cobalt lithium phosphate (Ca0.1Co0.9Li(PO₄)) 405914-83-2, Cobalt lithium zinc phosphate ((Co,Zn)Li(PO₄)) 405914-88-7, Cobalt lithium zinc phosphate (Co0.9LiZn0.1(PO₄)) 405914-93-4, Cobalt lithium strontium phosphate ((Co,Sr)Li(PO₄)) 405914-98-9, Cobalt lead lithium phosphate ((Co,Pb)Li(PO₄)) 405915-04-0, Cadmium cobalt lithium phosphate ((Cd,Co)Li(PO₄)) 405915-09-5, Cobalt lithium tin phosphate ((Co,Sn)Li(PO₄)) 405915-14-2, Barium cobalt lithium phosphate ((Ba,Co)Li(PO₄)) 405915-21-1, Beryllium cobalt lithium phosphate ((Be,Co)Li(PO₄)) 405915-29-9, Cobalt lithium magnesium phosphate (Co0.5-1LiMg0-0.5(PO₄)) 405915-34-6, Cobalt lithium magnesium phosphate (Co0.8-1LiMg0-0.2(PO₄)) 405915-39-1, Calcium cobalt lithium phosphate (Ca0-0.5Co0.5-1Li(PO₄)) 405915-44-8, Calcium cobalt lithium phosphate (Ca0-0.2Co0.8-1Li(PO₄)) 405915-48-2, Cobalt lithium zinc phosphate (Co0.5-1LiZn0-0.5(PO₄)) 405915-51-7, Cobalt lithium zinc phosphate (Co0.8-1LiZn0-0.2(PO₄)) 405915-56-2, Cobalt lithium strontium phosphate (Co0.5-1LiSr0-0.5(PO₄)) 405915-59-5, Cobalt lithium strontium phosphate (Co0.8-1LiSr0-0.2(PO₄)) 405915-63-1, Cobalt lead lithium phosphate (Co0.5-1Pb0-0.5Li(PO₄)) 405915-66-4, Cobalt lead lithium phosphate (Co0.8-1Pb0-0.2Li(PO₄)) 405915-69-7, Cadmium cobalt lithium phosphate (Cd0-0.5Co0.5-1Li(PO₄)) 405915-79-9, Cadmium cobalt lithium phosphate (Cd0-0.2Co0.8-1Li(PO₄)) 405915-82-4, Cobalt lithium tin phosphate (Co0.8-1LiSn0-0.2(PO₄)) 405915-85-7, Cobalt lithium tin phosphate (Co0.95-1LiSn0-0.05(PO₄)) 405915-88-0, Cobalt lithium tin phosphate

(Co0.5-1LiSn0-0.5(PO4)) 405915-90-4, Barium **cobalt**
 lithium phosphate (Ba0-0.5Co0.5-1Li(PO4)) 405915-92-6, Barium
cobalt lithium phosphate (Ba0-0.2Co0.8-1Li(PO4))
 405915-94-8, Beryllium **cobalt** lithium phosphate
 (Be0-0.5Co0.5-1Li(PO4)) 405915-96-0, Beryllium **cobalt**
 lithium phosphate (Be0-0.2Co0.8-1Li(PO4))
 RL: DEV (Device component use); USES (Uses)
 (lithium-based cathode active materials for rechargeable
 lithium battery and preparation thereof)

IT 84159-18-2P, Lithium vanadium phosphate Li₃V₂(PO₄)₃
 349632-76-4P, Iron lithium magnesium phosphate
 (Fe0.9LiMg0.1(PO₄)) 349632-79-7P, Calcium iron lithium
 phosphate (Ca0.1Fe0.9Li(PO₄)) 349632-82-2P, Iron lithium zinc
 phosphate (Fe0.9LiZn0.1(PO₄))
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (lithium-based cathode active materials for rechargeable
 lithium battery and preparation thereof)

IT 405915-04-0, Cadmium **cobalt** lithium phosphate
 ((Cd,Co)Li(PO₄)) 405915-69-7, Cadmium
cobalt lithium phosphate (Cd0-0.5Co0.5-1Li(PO₄))
 405915-79-9, Cadmium **cobalt** lithium phosphate
 (Cd0-0.2Co0.8-1Li(PO₄))
 RL: DEV (Device component use); USES (Uses)
 (lithium-based cathode active materials for rechargeable
 lithium battery and preparation thereof)

RN 405915-04-0 HCAPLUS

CN Cadmium cobalt lithium phosphate ((Cd,Co)Li(PO₄)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
Co	0 - 1	7440-48-4
Cd	0 - 1	7440-43-9
Li	1	7439-93-2

RN 405915-69-7 HCAPLUS

CN Cadmium cobalt lithium phosphate (Cd0-0.5Co0.5-1Li(PO₄)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
Co	0.5 - 1	7440-48-4
Cd	0 - 0.5	7440-43-9
Li	1	7439-93-2

RN 405915-79-9 HCAPLUS

CN Cadmium cobalt lithium phosphate (Cd0-0.2Co0.8-1Li(PO₄)) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O4P	1	14265-44-2
Co	0.8 - 1	7440-48-4
Cd	0 - 0.2	7440-43-9
Li	1	7439-93-2

RETABLE

Referenced Author (RAU)	Year (R PY)	VOL (R VL)	PG (R PG)	Referenced Work (RWK)	Referenced File
Amine, K	2000	14	133	8 V and 2 V positive	
Amine, K	2000	3	178	Electrochem. Solid-S	HCAPLUS
Andersson	2000	130	41	Solid State Ionics	HCAPLUS
Andersson, A	2000	3	66	Electrochem. Solid-S	HCAPLUS
Anon	1992			DE 4024409 A1	HCAPLUS
Anon	1992			DE 4024409 A	HCAPLUS
Anon	1993			CA 2096386	HCAPLUS
Anon	1993			JP 52999101	
Anon	1993			JP 5325961	
Anon	1993			EP 571858 B1	HCAPLUS
Anon	1995			WO 9512900	HCAPLUS
Anon	1996			JP 08171938	HCAPLUS
Anon	1997			JP 09134724 A	HCAPLUS
Anon	1997			JP 09134725	HCAPLUS
Anon	1997			JP 09171827	HCAPLUS
Anon	1997			JP 9134724	
Anon	1997			WO 9740541	HCAPLUS
Anon	1998			CA 2200998	HCAPLUS
Anon	1999			JP 11025983	HCAPLUS
Anon	1999			JP 11025983 A	HCAPLUS
Anon	1999			EP 11111295	
Anon	2000			EP 1049182 A2	HCAPLUS
Anon	2000			JP 2000294238	HCAPLUS
Anon	2000			JP WO200060680	
Anon	2001			JP 2001052733	HCAPLUS
Anon	2001			JP 2001085010	HCAPLUS
Anon	2001			JP 2001110414	HCAPLUS
Anon	2001			JP 2001110455	HCAPLUS
Armand	2003			US 6514640 B1	HCAPLUS
Barker	1999			US 5871866 A	HCAPLUS
Barker	2000			US 6153333 A	HCAPLUS
Best, A	1998	34	236	J. Australas. Ceram.	HCAPLUS
Boutinaud, P	1996	6	381	J. Mater. Chem	HCAPLUS
Butt, G	1998	34	60	J. Australas. Ceram.	HCAPLUS
Chung	2002	1	123	Nature Materials	HCAPLUS
Cocciantelli, J	1995	78	143	Solid State Ionics	HCAPLUS
Delmas, C	1994	69	257	Solid Ionics	HCAPLUS
Garcia-Alvarado, F	2000	39	239	Bol. Soc. Esp. Ceram	HCAPLUS
Goni	1998	84		Journal of Applied P	HCAPLUS
Gopalakrishana, J	1992	4	24332	Chemistry of Material	
Kamauchi	1996			US 5538814 A	HCAPLUS
Labat	1993			US 5219677 A	HCAPLUS
Lutsko, V	1990	51-52	97	Phosphorus, Sulfur S	HCAPLUS
Martinez-Juarez	1998	102	372	J. Phys, Chem B	HCAPLUS
Nanjundaswamy, K	1996	92	1	Solid State Ionics	HCAPLUS
Okada, S	2000	14	133	Cathodes properties	HCAPLUS
PCT Search Authority				International Search	
Padhi, A	1997	144	1188	J. Electrochem. Soc	HCAPLUS
Padhi, A	1997	144	1609	J. Electrochem. Soc	HCAPLUS
Vaknin	1999	60	1100	Phys. Rev. B: Conden	HCAPLUS
Walk	1996			US 5496663 A	HCAPLUS
Walk	1996			US 5567548 A	HCAPLUS

DN 135:245002
 TI Copper-based anode material for nonaqueous electrolyte secondary battery by electroplating
 IN Ohara, Shuji; Ishida, Shintaro
 PA Mitsui Mining and Smelting Co., Ltd., Japan
 SO Jpn. Kokai Tokyo Koho, 6 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2001256968	A	20010921	JP 2000-69421	20000313 <--
PRAI JP 2000-69421		20000313	<--	

AB The anode material comprises a Cu foil electroplated with alloys. The anode material is manufactured by electroplating of a Cu foil, followed by heating to form intermetallic compds. The anode material gives batteries with high capacity and high-rate performance.

IC ICM H01M0004-02
 ICS C25D0005-50; C25D0007-06; H01M0004-38; H01M0010-40
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 56
 IT **Battery anodes**
 Electrodeposition
 Secondary batteries
 (manufacture of copper-based anode material for nonaq. electrolyte secondary

battery by electroplating)
 IT 7440-02-0P, Nickel, uses 7440-31-5P, Tin, uses
 7440-36-0P, Antimony, uses 7440-66-6P, Zinc, uses 11110-83-1P
 11143-56-9P 11146-70-6P 12202-01-6P 12797-46-5P 39286-52-7P
 39460-45-2P 50941-27-0P 51636-79-4P 54342-36-8P 77885-23-5P
 88872-71-3P 361144-76-5P 361144-77-6P
 RL: DEV (Device component use); PNU (Preparation, unclassified); TEM
 (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (manufacture of copper-based anode material for nonaq. electrolyte secondary

battery by electroplating)
 IT 12297-65-3 12394-61-5
 RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
 (manufacture of copper-based anode material for nonaq. electrolyte secondary

battery by electroplating)
 IT 7440-31-5P, Tin, uses 39286-52-7P
 RL: DEV (Device component use); PNU (Preparation, unclassified); TEM
 (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (manufacture of copper-based anode material for nonaq. electrolyte secondary

battery by electroplating)
 RN 7440-31-5 HCAPLUS
 CN Tin (CA INDEX NAME)

Sn

RN 39286-52-7 HCAPLUS
 CN Cobalt alloy, nonbase, Co,Sn (CA INDEX NAME)

Component	Component Registry Number
Co	7440-48-4
Sn	7440-31-5

IT 12394-61-5

RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(manufacture of copper-based anode material for nonaq. electrolyte
secondary
battery by electroplating)

RN 12394-61-5 HCAPLUS

CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

L114 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 2001:377176 HCAPLUS Full-text

DN 134:355496

TI Secondary nonaqueous electrolyte batteries

IN Kajiura, Hisashi; Yamaura, Kiyoshi

PA Sony Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese33333339

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001143701	A	20010525	JP 1999-325940	19991116 <--
PRAI	JP 1999-325940		19991116 <--		
AB	The batteries have Li intercalating electrodes and nonaq. electrolyte solution, where the anode active mass contains a Li alloying alloy phase and a Li nonalloying alloy phases. The alloying phase is preferably CoSn , CoSn2 , Co3Sn2 , Ni3Sn4 , Ni3Sn2 , and/or Ni3Sn ; and the nonalloying phase is Co3SnC0.7 , Co2C , Co3C , and/or Ni3C .				
IC	ICM H01M0004-40				
	ICS H01M0004-02; H01M0010-40				
CC	52-2 (Electrochemical, Radiational, and Thermal Energy Technology)				
ST	secondary lithium battery anode alloy compn; lithium alloying nonalloying phase battery anode alloy; cobalt tin alloy lithium battery anode; nickel tin alloy lithium battery anode; carbon metal alloy lithium battery anode				
IT	Battery anodes (anodes from alloys containing lithium alloying and nonalloying phases for secondary lithium batteries)				
IT	7439-93-2, Lithium , uses 12011-59-5, Cobalt carbide (Co3C) 12012-02-1, Nickel carbide (Ni3C) 12059-23-3 12059-24-4 12192-29-9, Cobalt carbide (Co2C) 12202-01-6 12297-65-3 12394-61-5 12526-67-9 339334-52-0, Cobalt tin carbide (Co3SnC0.7)				
	RL: DEV (Device component use); USES (Uses) (anodes from alloys containing lithium alloying and nonalloying phases for secondary lithium batteries)				

IT 12394-61-5 12526-67-9

RL: DEV (Device component use); USES (Uses)
 (anodes from alloys containing lithium alloying and nonalloying
 phases for secondary lithium batteries)

RN 12394-61-5 HCAPLUS

CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

RN 12526-67-9 HCAPLUS

CN Cobalt, compd. with tin (3:2) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	3	7440-48-4
Sn	2	7440-31-5

=> d bib abs hitind hitstr retable tot 1115

L115 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1998:118257 HCAPLUS Full-text

DN 128:233657

TI Co-Sn intermetallic phases and their formation at the
 Co/Sn interface studied with perturbed angular
 correlation (PAC) method

AU Wodniecki, P.; Wodniecka, B.; Kulinska, A.; Hrynkiewicz, A. Z.

CS Henryk Niewodniczanski Institute of Nuclear Physics, Krakow, 31-342, Pol.

SO Journal of Alloys and Compounds (1998), 264(1-2), 14-18
 CODEN: JALCEU; ISSN: 0925-8388

PB Elsevier Science S.A.

DT Journal

LA English

AB Cobalt-tin intermetallic compds. of different stoichiometries were studied by
 means of the perturbed angular correlation (PAC) technique. The hyperfine
 interaction parameters for ^{111}Cd probes in the crystal lattices of CoSn_2 and
 Co_3Sn_2 were determined. A $T^{3/2}$ temperature dependence of the elec. field
 gradient (EFG) in CoSn_2 compound was found. Due to the thermal interdiffusion
 in a bilayer Co/Sn sample the formation of the stoichiometric CoSn phase was
 observed

CC 56-8 (Nonferrous Metals and Alloys)

ST cobalt tin intermetallic pptn interface

IT Diffusion

Interface

Magnetic hyperfine field

(Co-Sn intermetallic phases and their formation at
 the Co/Sn interface studied with perturbed angular
 correlation (PAC) method)

IT Intermetallic compounds

RL: PRP (Properties)

(Co-Sn intermetallic phases and their formation at
 the Co/Sn interface studied with perturbed angular
 correlation (PAC) method)

IT 12297-65-3 12394-61-5 12526-67-9

RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)
 (Co-Sn intermetallic phases and their formation at the Co/Sn interface studied with perturbed angular correlation (PAC) method)

IT 7440-31-5, Tin, properties 7440-48-4, Cobalt
 , properties

RL: PRP (Properties)
 (Co-Sn intermetallic phases and their formation at the Co/Sn interface studied with perturbed angular correlation (PAC) method)

IT 12394-61-5 12526-67-9

RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)
 (Co-Sn intermetallic phases and their formation at the Co/Sn interface studied with perturbed angular correlation (PAC) method)

RN 12394-61-5 HCPLUS

CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

RN 12526-67-9 HCPLUS

CN Cobalt, compd. with tin (3:2) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
Co	3	7440-48-4
Sn	2	7440-31-5

IT 7440-31-5, Tin, properties

RL: PRP (Properties)
 (Co-Sn intermetallic phases and their formation at the Co/Sn interface studied with perturbed angular correlation (PAC) method)

RN 7440-31-5 HCPLUS

CN Tin (CA INDEX NAME)

Sn

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Behar, M	1983	15/16	261	Hyp Int	
Beraud, R	1969	69	41	Nucl Instr and Meth	
Christiansen, J	1993			Hyperfine Interactio	
Christiansen, J	1976	B24	177	Z Phys	
Frauenfelder, H	1963			Perturbed Angular Co	
Haas, H	1973	58	3339	J Chem Phys	HCPLUS
Kajfosz, J	1973			Institute of Nuclear	
Lindgren, B	1978	18	26	Physica Scripta	HCPLUS

Lis, S	1978	5	445	Hyp Int	HCAPLUS
Massalski, T	1987	1		Binary Alloys Phase	
Platzer, R	1990	60	1003	Hyp Int	HCAPLUS
Torgeson, D	1976	37	956	Phys Rev Lett	HCAPLUS
Uhrmacher, M	1993	A57	1353	Appl Physics	HCAPLUS
Vianden, R	1979	7	1247	Hyp Int	HCAPLUS
Vianden, R	1981	10	1956	Hyp Int	
Villars, P	1991	1		Pearson's Handbook o	
Wesche, R	1986		24	Jahresbericht Konsta	
Wodniecka, B	1993	80	1039	Hyp Int	HCAPLUS
Wodniecka, B				Hyp Int in press	
Wodniecki, P	1995	88	1333	Acta Phys Pol	HCAPLUS
Wodniecki, P	1993	80	1033	Hyp Int	HCAPLUS
Wodniecki, P	1993	78	319	Hyp Int	HCAPLUS

L115 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN

AN 1998:51606 HCAPLUS Full-text

DN 128:160800

TI Organic electroluminescent device elements

IN Kanai, Hiroyuki

PA Mitsubishi Chemical Industries Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10012381	A	19980116	JP 1996-158320	19960619 <--
PRAI JP 1996-158320		19960619	<--	

AB The elements, suitable for use in display devices, comprise a cathode, containing an alloy consisting of Mg, Li (0.002-2 atomic %) and a metal (1-30 atomic %) having a work function > 4 eV selected from Ag, Al, In, Cr, Mn, Ni, Co, Sn and Cu.

IC ICM H05B0033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST aluminum magnesium lithium cathode electroluminescent device; indium magnesium lithium cathode electroluminescent device; chromium magnesium lithium cathode electroluminescent device; manganese magnesium lithium cathode electroluminescent device; nickel magnesium lithium cathode electroluminescent device; cobalt magnesium lithium cathode electroluminescent device; tin magnesium lithium cathode electroluminescent device; silver magnesium lithium cathode electroluminescent device; copper magnesium lithium cathode electroluminescent device

IT 147-14-8 2085-33-8, Tris(8-quinolinolato)aluminum 39348-03-3

57921-20-7, Silver alloy, Ag, Li, Mg 123847-85-8

202531-34-8 202531-35-9 202531-36-0 202531-37-1

202531-38-2 202531-39-3 202531-40-6 202531-41-7 202531-42-8

RL: DEV (Device component use); USES (Uses)
(organic electroluminescent devices)

IT 57921-20-7, Silver alloy, Ag, Li, Mg 202531-34-8

RL: DEV (Device component use); USES (Uses)
(organic electroluminescent devices)

RN 57921-20-7 HCAPLUS

CN Silver alloy, nonbase, Ag, Li, Mg (9CI) (CA INDEX NAME)

Component Component

Registry Number

Ag	7440-22-4	
Li	7439-93-2	
Mg	7439-95-4	

RN 202531-34-8 HCPLUS

CN Magnesium alloy, base, Mg 73,Ag 27,Li 0.1 (9CI) (CA INDEX NAME)

Component	Component	Component
Percent	Registry Number	

Mg	73	7439-95-4
Ag	27	7440-22-4
Li	0.1	7439-93-2

L115 ANSWER 3 OF 9 HCPLUS COPYRIGHT 2007 ACS on STN

AN 1988:477838 HCPLUS Full-text

DN 109:77838

TI Moessbauer spectroscopy study of ion-beam alloying of metal layers containing tin

AU Nagy Czako, Ilona; Vertes, Attila; Prinzipi, Giovanni; Tosello, Cristiana; Gratton, Luigi M.

CS Magkem. Lab., ELTE, Budapest, Hung.

SO Kemiai Kozlemenyek (1986), 66(1-2), 30-41
CODEN: KEKOAS; ISSN: 0022-9814

DT Journal

LA Hungarian

AB Moessbauer spectroscopy was used to study the effect of Sn ion beam irradiation on the phase composition of a Co-Sn electroplate and structure of Al and Ni substrates. Formation of the γ -Co₃Sn₂ phase occurred on a Co-Sn electroplate after ion-beam irradiation. Alloying of Ni by ion implantation with Sn led to formation of substituted Ni₃Sn and Ni₃Sn₂ intermetallic compds.

CC 56-7 (Nonferrous Metals and Alloys)

Section cross-reference(s): 72

ST tin ion implantation nickel intermetallic; cobalt
tin electroplate implantation tin; aluminum implantation
tin ion

IT 75349-09-6P

RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in cobalt-tin alloy electroplate by
ion beam irradiation)

IT 12059-23-3P 12059-24-4P

RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in tin ion-implanted nickel)

IT 7440-31-5, Tin, properties

RL: PRP (Properties)
(ion implantation of, in cobalt-tin alloy
electroplates and nickel, intermetallic compound formation by)

IT 7429-90-5, Aluminum, uses and miscellaneous

RL: USES (Uses)
(ion implantation of, with tin)

IT 39286-52-7

RL: USES (Uses)
(tin ion beam irradiation of electrodeposited,
intermetallic compound formation in)

IT 7440-02-0, Nickel, properties

RL: PRP (Properties)
(tin ion implantation of, intermetallic compound formation in)

IT 7440-31-5, Tin, properties
 RL: PRP (Properties)
 (ion implantation of, in cobalt-tin alloy
 electroplates and nickel, intermetallic compound formation by)
 RN 7440-31-5 HCPLUS
 CN Tin (CA INDEX NAME)

Sn

IT 39286-52-7
 RL: USES (Uses)
 (tin ion beam irradiation of electrodeposited,
 intermetallic compound formation in)
 RN 39286-52-7 HCPLUS
 CN Cobalt alloy, nonbase, Co,Sn (CA INDEX NAME)

Component	Component
Registry Number	
Co	7440-48-4
Sn	7440-31-5

L115 ANSWER 4 OF 9 HCPLUS COPYRIGHT 2007 ACS on STN
 AN 1985:189185 HCPLUS Full-text
 DN 102:189185
 TI The thermodynamic properties of solid cobalt-tin
 alloys
 AU Coemert, H.; Pratt, J. N.
 CS Dep. Metall. Mater., Univ. Birmingham, Birmingham, B15 2TT, UK
 SO Thermochimica Acta (1985), 84, 273-86
 CODEN: THACAS; ISSN: 0040-6031
 DT Journal
 LA English
 AB Reversible potentials of galvanic cells of the form Pt|(Co- Sn)(alloy) +
 $\text{SnO}_2|\text{ZrO}_2 + \text{CaO}|\text{O}_2(\text{air})/\text{Pt}$ were measured at 873-1323 K. The results were used
 to derive the thermodn. activities and the partial and integral free energies,
 enthalpies, and entropies of formation of the γ , γ' , CoSn [12297-65-3], and
 CoSn_2 [12394-61-5] intermediate phases. Exothermic heats of formation and
 neg. entropies of formation were observed throughout the system. The
 enthalpies of formation were compared with independent calorimetric and theor.
 values, and underlying factors influencing their values were considered. The
 possible contributions to the entropies of formation of the solid phases are
 discussed and their Debye temps. are estimated; Θ_D values of approx. 273, 256,
 and 169 K are suggested for Co_3Sn_2 [12526-67-9] (γ), CoSn , and CoSn_2 , resp.
 CC 56-8 (Nonferrous Metals and Alloys)
 Section cross-reference(s): 68, 69
 ST cobalt tin thermodn; intermetallic cobalt
 tin thermodn; activity cobalt tin; enthalpy
 cobalt tin; entropy cobalt tin; free
 energy cobalt tin; debye temp cobalt
 tin
 IT Heat of alloying
 (of cobalt, with tin)
 IT Activity
 Debye temperature

(of cobalt-tin alloys)
 IT Thermodynamics
 (of cobalt-tin alloys, solid)
 IT 7440-31-5, properties
 RL: PRP (Properties)
 (systems, cobalt-, thermodn. of)
 IT 7440-48-4, properties
 RL: PRP (Properties)
 (systems, tin-, thermodn. of)
 IT 12297-65-3 12394-61-5 12526-67-9
 RL: PRP (Properties)
 (thermodn. properties of)
 IT 7440-31-5, properties
 RL: PRP (Properties)
 (systems, cobalt-, thermodn. of)
 RN 7440-31-5 HCPLUS
 CN Tin. (CA INDEX NAME)

Sn

IT 12394-61-5 12526-67-9
 RL: PRP (Properties)
 (thermodn. properties of)
 RN 12394-61-5 HCPLUS
 CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

RN 12526-67-9 HCPLUS
 CN Cobalt, compd. with tin (3:2) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
Co	3	7440-48-4
Sn	2	7440-31-5

L115 ANSWER 5 OF 9 HCPLUS COPYRIGHT 2007 ACS on STN
 AN 1984:600178 HCPLUS Full-text
 DN 101:200178
 TI Structural studies of electrodeposited tin-cobalt alloys
 AU Jaen, J.; Varsanyi, M. L.; Kovacs, E.; Czako-Nagy, I.; Buzas, A.; Vertes, A.; Kiss, L.
 CS Dep. Phys. Chem. Radiol., L. Eotvos Univ., Budapest, H-1088, Hung.
 SO Electrochimica Acta (1984), 29(8), 1119-22
 CODEN: ELCAAV; ISSN: 0013-4686
 DT Journal
 LA English
 AB The cast Sn-Co alloys γ' Co₃Sn₂ (hexagonal) and CoSn₂ (tetragonal) were prepared and studied by using Moessbauer and x-ray measurements. These results were used in the

identification of the components of **electrodeposited Sn -Co** alloys obtained from mildly alkaline sulfate baths. The γ' **Co₃Sn₂** (hexagonal), **CoSn** (cubic) and metallic **Sn** were detected as components of the **electrodeposited** alloys. The relative amts. of the components is highly dependent on the bath operation conditions, and no γ' **Co₃Sn₂** was observed when the concentration of electroactive **Sn** in the plating bath was high. The Moessbauer parameters of all the studied alloys are given and are well within the observed values for binary **Sn** alloys.

CC 72-8 (Electrochemistry)
 Section cross-reference(s): 68, 73, 78, 79
 ST tin cobalt alloy **electrodeposit** structure;
 Moessbauer effect **tin cobalt intermetallic**;
 intermetallic **tin cobalt** prep Moessbauer
 IT Electrolytic polarization
 (in **cobalt-tin** alloy deposition on nickel-plated
 copper substrate in sulfate baths)
 IT Moessbauer effect
 (of **cobalt-tin** **electrodeposited** alloys)
 IT 7440-31-5P, preparation
 RL: PREP (Preparation)
 (isolation of, in **cobalt-tin**
electrodeposited alloy)
 IT 12526-67-9P 67828-86-8P
 RL: PREP (Preparation)
 (preparation of, from powdered metals, Moessbauer spectra in relation to)
 IT 7440-31-5P, preparation
 RL: PREP (Preparation)
 (isolation of, in **cobalt-tin**
electrodeposited alloy)
 RN 7440-31-5 HCPLUS
 CN Tin (CA INDEX NAME)

Sn

IT 12526-67-9P
 RL: PREP (Preparation)
 (preparation of, from powdered metals, Moessbauer spectra in relation to)
 RN 12526-67-9 HCPLUS
 CN Cobalt, compd. with tin (3:2) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
Co	3	7440-48-4
Sn	2	7440-31-5

L115 ANSWER 6 OF 9 HCPLUS COPYRIGHT 2007 ACS on STN
 AN 1981:127479 HCPLUS Full-text
 DN 94:127479
 TI X-ray spectral study of electronic structure of layered **cobalt-tin** (**CoSn**, **Co₃Sn₂**, and **CoSn₂**)
 AU Nemoshkalenko, V. V.; Uvarov, V. N.; Litvin, E. G.; Nagornyi, V. Ya.;
 Yatsenko, V. A.; Barabash, O. M.
 CS Inst. Metallofiz., Kiev, USSR
 SO Metallofizika (Kiev) (1980), 2(6), 42-6

DT CODEN: MANFDD; ISSN: 0204-3580
 LA Journal
 LA Russian
 AB The binding energy of Co 2p3/2 in the compds. is 777.5, 777.5, and 777.4 eV, resp., as compared to that of pure Co 778.28 eV. This reveals a transfer of electronic d. from Sn to Co atoms, resulting in a donor-acceptor Sn-Co bond. One can consider the Sn layer as a 2-dimensional long ligand of Co. The binding energies of Sn reflect the retention of the initial valent-electron structure of Sn in the layers.
 CC 65-1 (General Physical Chemistry)
 ST electronic structure cobalt tin; binding energy
 cobalt tin compd
 IT Ionization potential and energy
 (of cobalt in cobalt tin compds.)
 IT Energy level
 (of cobalt tin compds., ESCA in study of)
 IT Bond
 (cobalt-tin, in cobalt tin
 compds., donor-acceptor)
 IT 12297-65-3 12394-61-5 76797-60-9
 RL: PRP (Properties)
 (electronic structure of, ESCA in study of)
 IT 12394-61-5
 RL: PRP (Properties)
 (electronic structure of, ESCA in study of)
 RN 12394-61-5 HCAPLUS
 CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

L115 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN
 AN 1973:23135 HCAPLUS Full-text
 DN 78:23135
 TI **Electrodeposited** bright tin-cobalt
 intermetallic compound, CoSn [cobalt-tin]
 AU Clarke, M.; Elbourne, R. G.; MacKay, C. A.
 CS Dep. Metall. Mater., City London Polytech., London, UK
 SO Transactions of the Institute of Metal Finishing (1972), 50(4),
 160-3
 CODEN: TIMFA2; ISSN: 0020-2967
 DT Journal
 LA English
 AB The Co analog of **electrodeposited** NiSn was plated from an acid fluoride bath. Sn deposition had to be hindered more than necessary in Sn-Ni baths. The Co alloy was finegrained, hard, and bright, with the composition CoSn. X-ray diffraction showed it crystallized with a cubic structure ($a = 4.20 \text{ \AA}$) differing from hexagonal cast CoSn. **Electrodeposited** CoSn decomposed at 200° without changing appearance, into CoSn₂ and γ' -Co₃Sn₂, and tarnished at 350°. It was completely passive in aqueous media from pH 1.4 to 14, and the passivation potential is estimated to be (298°K) $-(0.44 - 0.06 \text{ pH}) \text{ V}$. The passive film can transform to higher oxidation states, the highest with a potential $+(1.68 - 0.06 \text{ pH}) \text{ V}$, but it remains protective. CoSn dissolved fairly readily in concentrated HCl.
 CC 77-6 (Electrochemistry)
 Section cross-reference(s): 70

ST electrodeposition cobalt tin intermetallic compd; crystal structure intermetallic cobalt tin; passivation potential pH cobalt tin

IT Passivation
(of cobalt-tin intermetallic compound electroplates)

L115 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN
AN 1971:145497 HCAPLUS Full-text
DN 74:145497

TI Cobalt-tin system alloys
AU Panteleimonov, L. A.; Portnova, G. F.; Nesterova, O. P.
CS USSR
SO Vestnik Moskovskogo Universiteta, Seriya 2: Khimiya (1971), 12(1), 117-19
CODEN: VMUKA5; ISSN: 0579-9384

DT Journal
LA Russian

AB Co_3Sn_2 , CoSn , and Co_3Sn_2 were observed in the Co-Sn system during thermal and x-ray diffraction analys. and microstructural and microhardness studies of alloys prepared in a high-frequency furnace in a He atmospheric No Co_2Sn compound was observed. The polyhedral structure of the alloy with 40% Sn corresponded to Co_3Sn_2 . Alloys with 24% Sn had a eutectic structure formed by a solid solution of Co and Co_3Sn_2 . The alloys with 25-39% Sn were hypereutectic and consisted of a solid solution of Co_3Sn_2 and eutectic. The polyhedral structure was detected in alloy containing 49% Sn and consisting of CoSn . The alloys with 41-48% Sn had 2-phase structures of a solid solution of Co_3Sn_2 and CoSn . A 2-phase structure, formed by a solid solution from CoSn and Co_3Sn_2 , was evident from pictures of alloys containing 54-59% Sn.

CC 56 (Nonferrous Metals and Alloys)
ST cobalt tin phases structures
IT Tin alloys, base
 Tin alloys, containing
 (cobalt-, structure of)
IT Cobalt alloys, base
 Cobalt alloys, containing
 (tin-, structure of)
IT 12297-65-3P 12394-61-5P 12526-67-9P
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in cobalt-tin alloys)
IT 12394-61-5P 12526-67-9P
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in cobalt-tin alloys)
RN 12394-61-5 HCAPLUS
CN Cobalt, compd. with tin (1:2) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
Co	1	7440-48-4
Sn	2	7440-31-5

RN 12526-67-9 HCAPLUS
CN Cobalt, compd. with tin (3:2) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
Co	3	7440-48-4
Sn	2	7440-31-5

L115 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2007 ACS on STN
 AN 1910:8862 HCAPLUS Full-text
 DN 4:8862
 OREF 4:1597a
 TI Cobalt and Tin
 AU Duccellez, F.
 SO Bull. soc. chim. (1910), 7, 205
 DT Journal
 LA Unavailable
 AB The study of the e. m. f. curve showed only one compound, CoSn , although chemical exam. had suggested Co_3Sn_2 as well.
 CC 9 (Metallurgy)
 IT 7440-36-0, Antimony
 (system, Co-Sb)
 IT 7440-31-5, Tin
 (system, Co-Sn)
 IT 7440-48-4, Cobalt
 (system, Sb-Co)
 IT 7440-48-4, Cobalt
 (system, Sn-Co)
 IT 7440-31-5, Tin
 (system, Co-Sn)
 RN 7440-31-5 HCAPLUS
 CN Tin (CA INDEX NAME)

Sn

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<http://www.stn-international.de/archive/stn online news/fraghitstr ex.pdf>

>>> IPC Reform backfile reclassification has been loaded to 31 December 2006. No update date (UP) has been created for the reclassified documents, but they can be identified by 20060101/UPIC and 20061231/UPIC. <<<

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 PLEASE VISIT:
<http://www.stn-international.de/training center/patents/stn guide.pdf>

FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
<http://scientific.thomson.com/support/patents/coverage/latestupdates/>

PLEASE BE AWARE OF THE NEW IPC REFORM IN 2006, SEE
<http://www.stn-international.de/stndatabases/details/ ipc reform.html> and
<http://scientific.thomson.com/media/scpdf/pcrdwpi.pdf>

>>> FOR DETAILS ON THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX
 PLEASE SEE
[>>>](http://www.stn-international.de/stndatabases/details/dwpi r.html)
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L134 ANSWER 1 OF 1 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN

AN 2006-631721 [66] WPIX Full-text

DNC C2006-194788 [66]

DNN N2006-509300 [66]

TI Cathode material for non-aqueous secondary battery, contains **tin** and iron, nickel and/or **cobalt**, and does not have phase of specific intermetallic compound

DC L03; M22; P53; X16

IN NAGATA T; NEGI N; SAGUCHI A; YASHIRO M

PA (SUMQ-C) SUMITOMO METAL IND LTD; (JUKI-N) JUKIN MORIKOPU KK

CYC 1

PIA JP 2006236835 A 20060907 (200666)* JA 13[2]

ADT JP 2006236835 A JP 2005-51189 20050225

PRAI JP 2005-51189 20050225

AN 2006-631721 [66] WPIX Full-text

AB JP 2006236835 A UPAB: 20061013

NOVELTY - The cathode material contains **tin** and at least one element chosen from iron, nickel and/or **cobalt**, and comprises a phase of specific compound(s). The cathode material is manufactured by rapid solidification method. The phase of intermetallic compound does not exist in the cathode material.

DETAILED DESCRIPTION - The cathode material contains **tin** and at least one element chosen from iron, nickel and/or **cobalt**, and comprises a phase of specific compound(s). The cathode material is manufactured by rapid solidification method. The cathode material does not contain the phase of an intermetallic compound of formula: AaSn_b, where A is element chosen from nickel, **cobalt** and iron, and a/b is atomic ratio and is greater than 1. An INDEPENDENT CLAIM is included for manufacture of cathode material.

USE - For non-aqueous secondary battery such as lithium ion secondary cell used for portable electronic device.

ADVANTAGE - The cathode material has high discharge capacitance and improved initial-stage efficiency, with reduced irreversible capacitance during first-time charging and discharging. DESCRIPTION OF DRAWINGS - The graph shows the X-ray diffraction result of the cathode material. (Drawing includes non-English language text)

TECH

INORGANIC CHEMISTRY - Preferred Composition: The cathode material further contains element(s) chosen from aluminum, titanium, zirconium and indium, and does not contain **Co₃Sn₂** phase. The cathode material comprises **CoSn** phase and/or **Co₃Sn₂** phase.

=> d his

(FILE 'HOME' ENTERED AT 09:51:02 ON 18 APR 2007)
 SET COST OFF

FILE 'HCAPLUS' ENTERED AT 09:51:26 ON 18 APR 2007

L1 1 S US20040053131/PN OR (US2003-664683# OR JP2002-271710) /AP, PRN
E TANIZAKI/AU

L2 47 S E15,E19
E HIROAKI/AU

L3 4 S E3

L4 4 S E50
E OMARU/AU

L5 43 S E4,E6
E ATSUO/AU

L6 1 S E3
SEL RN L1

FILE 'REGISTRY' ENTERED AT 10:11:45 ON 18 APR 2007

L7 21 S E1-E21

L8 1 S L7 AND SN/MF

L9 7 S L7 AND SN/ELS AND CO/ELS AND 2/ELC.SUB

L10 1 S 12394-61-5

L11 1 S 39286-52-7

L12 1 S 12526-67-9

L13 8159 S (CO/ELS OR COBALT OR 7440-48-4/CRN) AND (SN/ELS OR TIN OR 744
L14 191 S L13 AND 2/ELC.SUB

L15 184 S L14 NOT L9

L16 80 S L15 AND NONBASE

L17 3 S L16 AND CO(A) SN

L18 171 S L15 AND BASE

L19 2 S L18 AND CO(A) SN

L20 3 S L11,L17,L19

L21 194 S SN/MF

L22 55 S L21 NOT MASS

FILE 'HCAPLUS' ENTERED AT 10:19:58 ON 18 APR 2007

L23 248 S L20

L24 282 S COSN

L25 515 S L23,L24

L26 48 S L10

L27 50 S COSN2

L28 81 S L26,L27

L29 37 S L12

L30 47 S CO3SN2

L31 59 S L29,L30

L32 99798 S L8,L22
4 S L25 AND L28 AND L31 AND L32

L33 10 S L25 AND L28 AND L32

L34 6 S L25 AND L31 AND L32

L35 6 S L28 AND L31 AND L32

L36 14 S L33-L36

FILE 'REGISTRY' ENTERED AT 10:24:29 ON 18 APR 2007

FILE 'HCAPLUS' ENTERED AT 10:26:04 ON 18 APR 2007

L38 13 S L25 AND L28 AND L31

L39 23 S L37,L38

L40 248 S L11,L17,L19

L41 48 S L10

L42 37 S L12

L43 1 S L40 AND L41 AND L42

L44 14 S L37,L43

L45 1 S L1-L6 AND L44

L46 56 S L1-L6 AND SONY?/PA,CS

L47 4 S L46 AND PY<=2002 NOT P/DT
 L48 51 S L46 AND (PD<=20020918 OR PRD<=20020918 OR AD<=20020918) AND P
 L49 4 S L46 AND PY<=2003 NOT P/DT
 L50 52 S L46 AND (PD<=20030918 OR PRD<=20030918 OR AD<=20030918) AND P
 L51 56 S L47-L50
 L52 5 S L45, L51 AND L32
 L53 12 S L37 AND PY<=2002 NOT P/DT
 L54 12 S L37 AND PY<=2003 NOT P/DT
 L55 2 S L37 NOT L53, L54
 L56 18 S L52-L55
 L57 1828 S L40 OR SN(A)CO OR COSN OR L23 OR L24
 L58 14 S L57 AND L28 AND L31
 L59 4 S L58 AND L32
 L60 16 S L57 AND L28 AND L32
 L61 9 S L57 AND L31 AND L32
 L62 6 S L28 AND L31 AND L32
 L63 33 S L58-L62
 L64 23 S L63 AND PY<=2003 NOT P/DT
 L65 23 S L63 AND PY<=2002 NOT P/DT
 L66 3 S L63 AND (PD<=20020918 OR PRD<=20020918 OR AD<=20020918) AND P
 L67 3 S L63 AND (PD<=20030918 OR PRD<=20030918 OR AD<=20030918) AND P
 E ELECTRODE/CW, CT
 L68 0 S L64-L67 AND E3, E4
 L69 0 S L64-L67 AND E94, E95
 L70 3 S L64-L67 AND E95+OLD, NT
 L71 5 S L64-L67 AND ?ELECTRODE?
 L72 6 S L70, L71
 L73 1 S L63-L72 AND L1-L6
 L74 2 S L63-L72 AND SONY?/PA, CS
 L75 6 S L72-L74
 L76 20 S L64-L74 NOT L75
 SEL DN AN 1 13 15 16 20
 L77 5 S L76 AND E1-E15
 L78 11 S L75, L77
 L79 7 S L44 NOT L78

FILE 'REGISTRY' ENTERED AT 11:12:43 ON 18 APR 2007

L80 114970 S LI/ELS OR ?LITHIUM?/CNS OR 7439-93-2/CRN
 L81 5954 S L80 AND (B/ELS OR (?BORON? OR ?BORAT? OR ?BORIC?)/CNS OR 7440
 L82 1012 S L80 AND (GA/ELS OR ?GALLIUM?/CNS OR 7440-55-3/CRN)
 L83 935 S L80 AND (SB/ELS OR ?ANTIMON?/CNS OR 7440-36-0/CRN)
 L84 439 S L80 AND (CD/ELS OR ?CADIUM?/CNS OR 7440-43-9/CRN)
 L85 1320 S L80 AND (AG/ELS OR ?SILVER?/CNS OR 7440-22-4/CRN)
 L86 355 S L80 AND (HF/ELS OR ?HAFNIUM?/CNS OR 7440-58-6/CRN)
 L87 9769 S L81-L86

FILE 'HCAPLUS' ENTERED AT 11:15:37 ON 18 APR 2007

L88 17007 S L87
 L89 6 S L88 AND L57
 L90 1 S L88 AND L28
 L91 0 S L88 AND L31
 L92 215 S L88 AND L32
 L93 0 S L89, L90 AND L92
 L94 7 S L89, L90
 L95 5 S L94 NOT (98:72913 OR 96:122986)/DN
 L96 0 S L95 AND PY<=2002 NOT P/DT
 L97 0 S L95 AND PY<=2003 NOT P/DT
 L98 4 S L95 AND (PD<=20030918 OR PRD<=20030918 OR AD<=20030918) AND P
 L99 3 S L95 AND (PD<=20020918 OR PRD<=20020918 OR AD<=20020918) AND P
 L100 4 S L98, L99

L101 3 S L100 NOT SOLUTION/TI
 L102 14 S L78, L101
 L103 14 S L102 AND (SN OR TIN OR LI OR LITHIUM OR CO OR COBALT OR ?CARB

FILE 'REGISTRY' ENTERED AT 11:20:07 ON 18 APR 2007
 L104 2 S (CARBON OR GRAPHITE)/CN

FILE 'HCAPLUS' ENTERED AT 11:20:09 ON 18 APR 2007
 L105 2 S L104 AND L102
 L106 14 S L103, L105
 SEL HIT RN

FILE 'REGISTRY' ENTERED AT 11:21:11 ON 18 APR 2007
 L107 18 S E16-E33
 L108 13 S L107 AND L87
 L109 5 S L107 NOT L108

FILE 'REGISTRY' ENTERED AT 11:24:13 ON 18 APR 2007

FILE 'HCAPLUS' ENTERED AT 11:25:14 ON 18 APR 2007
 L110 5 S L106 AND (CATHODES+OLD, NT OR ANODES+OLD, NT OR ELECTRODES+OLD,
 L111 5 S L106 AND H01M/IPC, IC, ICM, ICS
 L112 5 S L110-L111
 L113 4 S L106 AND (PRIMARY BATTERIES+OLD, NT OR SECONDARY BATTERIES+OLD
 L114 5 S L112, L113
 L115 9 S L106 NOT L114

FILE 'WPIX' ENTERED AT 11:28:08 ON 18 APR 2007

E CO SN/MF
 E CO.SN/MF
 E CO . SN/MF
 E COSN/MF
 E TIN COBALT/CN
 E COBALT TIN/CN
 E COBALT STAN/CN
 E STAN/CN
 L116 1 S US20040053131/PN
 L117 51655 S H01M004/IPC, IC, ICM, ICS
 L118 13670 S H01M004-02/IPC, IC, ICM, ICS
 L119 3750 S H01M004-38/IPC, IC, ICM, ICS
 L120 2246 S L117 AND TIN
 L121 68 S L117 AND (COSN OR (CO OR COBALT) (A) (SN OR TIN))
 L122 2 S L117 AND (COSN2 OR CO(A)SN2)
 L123 2 S L117 AND (CO3SN2 OR CO3(A)SN2)
 L124 2 S L121 AND L122, L123
 L125 3 S L122-L124
 E TIN/CN
 L126 1 S E3
 E COBALT/CN
 L127 1016 S R03102/DCN
 L128 5 S L119 AND L127
 L129 0 S L128 AND L125
 L130 1 S COBALT/CN
 L131 2977 S R03034/DCN
 L132 6 S L119 AND L131
 L133 3 S L125 AND (CO OR COBALT OR SN OR TIN OR COSN OR COSN2 OR CO3SN
 L134 1 S L133 AND L121 AND L122 AND L123

FILE 'WPIX' ENTERED AT 11:45:57 ON 18 APR 2007